

Notice of Allowability

Application No.

10/031,635

Applicant(s)

NAKAHAMA ET AL.

Examiner

Henry S. Hu

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment January 21, 2004.
2. ☒ The allowed claim(s) is/are 1-19.
3. ☒ The drawings filed on 21 January 2004 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in two telephone interviews with **Marc S. Weiner (tel. 703 205-8000) and Ben Schroeder (tel. 703 205-8079) on March 29 and April 1, 2004** to amend Claims 7 and 19:

Claim 7 at lines 1-2 please replace the phrase of "A rubber composition for extrusion, wherein it" with "The rubber composition for extrusion according to claim 3, wherein said composition"

Claim 19 at line 2 please replace the word of "it" with "said composition"

DETAILED ACTION

2. Applicants' amendment filed on January 21, 2004 was received.

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Parent Claims 1 and 10 were amended to correct the double "B" and to incorporate the limitation based on "per 100 g of the ethylene / α -olefin / non-conjugated polyene copolymer rubber" for the amount of alkoxysilane compound. **New Claim 19** was added. **Claim 7, originally a parent claim, is amended to be dependent from Claim 3.** The examiner confirms the support for new Claim 19 is found in original parent Claim 7 as well as on page 37-38 for Tables 5-6 of the specific limitation of die swell ratio.

In addition to the specification objections (a) - (f), the paragraphs beginning on page 4 at line 11, page 6 at line 10, page 4 at line 16, page 12 at line 20, page 13 at line 20, page 17 at line 17 and page 19 at line 17 were replaced with new paragraphs to correct the errors regarding the informalities as suggested by the examiner. Additionally, **a new set of drawing sheets (three sheets with six figures) given by the Applicants are accepted by the examiner.** The examiner thereby withdraws the specification objections, drawing objection and claim objections in the previous Office Action dated September 15, 2003. **Claims 1-19 are pending now.** An action follows.

Claim rejections under 35 USC 102 and 103 in the previous Office Action dated September 15, 2003 are now removed for the reasons given in paragraphs 3-9 thereafter.

Allowable Subject Matter

3. Claims 1-19 are allowed.

4. The following is an examiner's statement of reasons for allowance: The above claims 1-19 are allowed over the closest references:

5. The limitation of amended parent **Claim 1** of present invention relates to *a rubber composition for extrusion comprising (A) an ethylene / α -olefin having 3 to 12 carbon atoms / non-conjugated polyene copolymer rubber, (B) 30-300 phr of carbon black, and (C) $1.0 \times 10^{-5} - 5.0 \times 10^{-3}$ mole of an alkoxysilane compound having the specific formula (I) per 100 g of the ethylene / α -olefin / non-conjugated polyene copolymer rubber (A). The other parent **Claim 10** relates to the same rubber composition of Claim 1 but is useful for molding. See other limitations of dependent Claims 2-9 and 11-19.*

6. In view of above-mentioned two amendments, both parent **Claims 1 and 10** of present invention have been amended to incorporate the specific limitations as (A) using “ $1.0 \times 10^{-5} - 5.0 \times 10^{-3}$ mole of an alkoxysilane compound having the specific formula (I) per 100 g of the ethylene / α -olefin / non-conjugated polyene copolymer rubber” and (B) such a rubber composition is used for “extrusion” or “molding”. With respect to **two 102 rejections** for Claims 1-5, 8-9, 10-14 and 17-18, both **Yatsuyanagi and Thurn references fail to teach or fairly suggest such a specific combined limitation** as discussed below.

Yatsuyanagi et al. only disclose a rubber composition comprising an ethylene-propylene-diene rubber such as EPDM on column 7 at line 48-49, coupling agent such as bis-

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[triethoxysilyl)-propyl]tetradulfide or 3-mercaptopropyl-trimethoxy-silane, a polysiloxane
containing specifically the claimed alkoxysilane group, and a filler such as carbon black.

Although Yatsuyanagi et al. further disclose the diene copolymer may be any diene-containing rubber generally contained in various rubber compositions (column 13, line 47-50), no a working examples disclose the use of a copolymer from non-conjugated polyene or diene monomers at all. In a close examination, the amounts specifically used for organosilane components are not overlapping the claimed amount (column 13, line 56-65 and see also examples).

Thurn et al. only disclose a rubber composition comprising (A) an ethylene-propylene-diene rubber such as **EPDM** (column 7, line 20-25), (B) a sulfur-containing coupling agent such as **bis-[triethoxysilyl)-propyl]tetradulfide** (column 6, line 5-56) and **3-mercaptopropyl-trimethoxy-silane** (column 3, line 66; column 1, line 43), and (C) a filler such as **carbon black** (abstract, line 19; column 4, line 40). It is noted that Thurn et al. have already disclosed **the diene copolymers may be from any non-conjugated diene or polyene** (column 7, line 20-25). However, the amounts specifically used for organosilane components, for example the Si-69, are much higher than the claimed amount (column 13, line 56-65 and see also examples 1-12), which has been pointed out by the Applicants on page 21-22 on the amendment.

7. With respect to 102 or 103 rejections for **Claims 6-7 and 15-16**, which are now all dependent from parent Claims 1 or 10. With respect to **new Claim 19**, it relates to the properties of Claim 1. As discussed in above, both two references, in combination or alone, fail to teach or fairly suggest such a specific combined limitation.

In order to **show the critical combination of such a specific limitation**, the present invention has shown in examples along with some comparative examples for unexpected results in obtaining a rubber composition for sidewall (page 31-54 and Table 1-13). Therefore, all the above-mentioned references, in combination or alone, does not teach or fairly suggest the limitations of present invention.

8. After further examination and search, the examiner found the following prior art did not teach the claimed limitation:

US Patent No. **5,349,020 to Okada** discloses that a vulcanizable rubber composition comprises tire tread composition comprising (A) a tread rubber compound containing an **ethylene / α -olefin / non-conjugated polyene copolymer rubber**, sulfur-containing vulcanizing agent and the filler (column 20, line 11-60; abstract, line 1-12). **No claimed organosilane compounds are used at all (see column 24, line 32-34)**. Additionally, no mention is on the use for extrusion or molding at all. Therefore, Okada fails to teach or fairly suggest the limitation of present invention.

9. The two key issues, regarding (A) using " **$1.0 \times 10^{-5} - 5.0 \times 10^{-3}$ mole of an alkoxysilane** compound having the specific formula (I) per 100 g of the **ethylene / α -olefin / non-conjugated polyene** copolymer rubber" and (B) such a rubber composition is used for "**extrusion**" or

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'molding', cannot be overcome by any or the combination of the above references, therefore, the present invention is novel.

10. As of the date of this office action, the examiner has not located or identified any reference that can be used singularly or in combination with another reference including the above references to render the present invention anticipated or obvious to one of the ordinary skill in the art. Therefore, the two independent and parent **Claims 1 and 10** are allowed for the reason listed above. Since the prior art of record fails to teach the present invention, the remaining pending **Claims 2-9 and 11-19** are passed to issue.

11. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance".

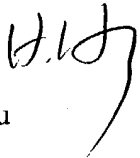
12. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Henry S. Hu whose telephone number is (571) 272-1103. The examiner can be reached on Monday through Friday from 9:00 AM –5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached on (571) 272-1114. The fax number for the organization


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where this application or proceeding is assigned is (703) 872-9306 for all regular communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Henry S. Hu

April 1, 2004


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